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November 15, 2004

Mr. Jim Holway
Deputy Director
Arizona Department of Water Resources
500 North Third Street
Phoenix, AZ 85004-3921

Dear Jim:

The Central Arizona Project (CAP) is pleased to participate in the Arizona Department of Water Resource's (ADWR) Well Impact Rules – Stakeholder Process. CAP believes that a thorough public participation process will result in well impact rules that are:

1. Based on the advancement of the science of hydrogeology since 1980,
2. Consistent with statutory intent; and,
3. Sensitive to the operational needs and water/infrastructure investments of the regulated community.

In addition to the issues raised in the ADWR paper, Possible Issues for Discussion, 10/27/2004, CAP offers the following issues for discussion:

- Recovery well permitting should consider the benefit of groundwater storage and thus consider a different standard of "increasing unreasonable impacts" than currently in use. Local and regional groundwater users derive a water management and operational benefit from the addition of water to aquifers including a "cut to the aquifer". Further, the analysis of impact currently does not contemplate the rise in groundwater that occurs from recharge, in effect prohibiting a recovering entity from deriving benefit from the mound created by storage and ignoring hydrogeologic reality. Currently, ADWR requires almost all Underground Storage Facility (USF) applicants to use current hydrogeologic modeling tools to approximate the temporal and spatial impacts of aquifer storage. These tools can be readily adapted to approximate aquifer rise related to underground storage.

- Impact analyses for new and replacement wells should consider the impact of potential groundwater withdrawal induced subsidence to surface facilities, such as the CAP aqueduct, roads and bridges, underground utilities, etc. Tools, including high precision GPS elevation surveys and remote sensing technology, coupled with state of the art hydrogeologic modeling are available to identify areas

susceptible to subsidence impacts. Well impact analyses can be improved to consider potential subsidence impacts.

- The determination of the area of hydrologic impact for the purposes permitting recovery wells should consider that the maximum area of hydrologic impact is evaluated, noticed, and publicly commented on through the USF permit application process. The area of impact for groundwater savings facilities may require additional analyses.

- The well impact standards should evaluate carefully the need of water providers to provide sustainable, reliable, and cost-efficient service to their customers, when considering the potential impacts to exempt well owners. The original impact rules are based on analytical solutions developed prior to the standardized use of personal computers. The analytical solutions are often invalid due to violation of basic aquifer assumptions required to solve the analytical solution.

- The well impact analyses for recovery of stored Colorado River water should be evaluated carefully. Significant public funds have been expended to store millions of acre-feet of Colorado River water within irrigation districts and water provider service area boundaries. In the case of a Colorado River shortage, stored Colorado River water will be required to be meet CAP and other water users' needs to protect public welfare and the economy of central Arizona. The recovery of Colorado River water may require a reduced standard of impact than other storage.

- Well impact standards should consider improving outdated well construction standards. Well owners are not required to provide an annular seal except in cases of abandonment. Further, rarely are exempt wells constructed of casing materials consistent with aquifer conditions and pressures. ADWR should consider requiring adherence to NGWA standards for wells to avoid aquifer cross-contamination.

CAP looks forward to participating in the Well Impact Rules – Stakeholder Process.

Sincerely,

Chuck Cullom
Hydrologist

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